

U.S. Application 10/561,044  
Amendment A

Docket: 1000.002

**IN THE DRAWINGS**

Please replace Figures 1-7 as originally filed with attached  
Figures 1-7.

**REMARKS**

Review and reconsideration of the Office Action dated October 11, 2008, is respectfully requested in view of the above amendments and the following remarks.

Claims 1-6 have been canceled. Claims 7-26 have been added. Support for new claims 7-26 can be found on the drawings as originally, Claims 1-6 as originally filed, paragraphs [0024] to [0049] of the specification as originally filed.

The drawings have been amended to overcome the Examiner's objections. Description of the drawing changes can be found below.

In Figure 1, the Figure numbering has been changed to Fig. 1 as requested by the Examiner.

In Figure 2, the Figure numbering has been changed to Fig. 2 as requested by the Examiner.

In Figure 3a, the Figure numbering has been changed to Fig. 3a as requested by the Examiner. In addition, elements 10a, 28a, 9a have been added as requested by the Examiner.

In Figure 3b, the Figure numbering has been changed to Fig. 8 as requested by the Examiner. In addition, element 13 has been re-numbered as 13a, element 28 has been re-numbered as element 27b, elements 28b and 14a have been added as requested by the Examiner.

In Figure 4, the Figure numbering has been changed to Fig. 4 as requested by the Examiner.

In Figure 5, the Figure numbering has been changed to Fig. 5 as requested by the Examiner.

In Figure 6, the Figure numbering has been changed to Fig. 6 as requested by the Examiner.

In Figure 7, the Figure numbering has been changed to Fig. 7 as

requested by the Examiner. In addition, element 7a has been added.

The specification has been amended to concur with the drawings changes.

No new matter has been added to the drawings, specification, or the claims by the present amendment.

For the reasons set forth below, Applicant believes that the pending set of claims is now in condition for allowance.

#### **Office Action**

Turning to the Office Action, the paragraphing of the Examiner is adopted.

#### **RESPONSE TO PRELIMINARY AMENDMENT**

The Examiner indicated that the Preliminary Amendment submitted with the filing of the present application is not in compliance with USPTO requirements.

The Examiner's position can be found on page 2 of the Office Action.

In response, Applicant canceled Claims 1-6 and added Claims 7-16. Claims 7-16 correspond to the claims filed in the defective Preliminary Amendment.

Applicant respectfully requests the Examiner to enter the new claims.

#### **Drawings - Formalities**

The Examiner objected the Drawings because of informalities.

The Examiner's position can be found on pages 2-3 of the Office Action.

In response, Applicant has amended the drawings to overcome

the Examiner's objections.

The term "Figure" has been replaced with the term "Fig." in all the Figures.

**Regarding Figures 3a and 3b**

In response, Applicant has re-numbered Figure 3b as "Fig. 8".

**Regarding reference number 32**

In response, Applicant has replaced reference number 32 with reference number 7 in Figure 7.

**Regarding reference numbers 17b, 27a, 27b, 28a, 28b, and 7a-**

In response, Applicant added these reference numbers to the drawings.

**Regarding reference number 33a**

In response, Applicant has amended the specification to overcome this objection.

Accordingly, withdrawal of the drawings objections is respectfully requested.

**Claims- Formalities**

The Examiner objected Claims 2 and 4-6 because of informalities.

The Examiner's position can be found on page 3 of the Office Action.

In response, Applicant has amended the claims to overcome the objection.

Accordingly, withdrawal of the objections is respectfully requested.

**Claim Rejection - Anticipation**

The Examiner rejects Claims 1, 4, and 6 as being anticipated by Lebost (US Patent No. 4,057,270).

The Examiner's position can be found on pages 3-4 of the Office Action.

Applicant respectfully traverses.

For a reference to be anticipated, it must teach **all the elements** of the claim.

The present set of claims contains three independent claims, namely, Claims 7, 8, and 21.

The following remarks are addressed to independent Claims 7, 8, and 21, because if these claims are not anticipated, it follows that none of the other rejected dependent claims are anticipated.

Compare with independent claims 7-8 and 21 the Lebost reference fails to teach:

- 1) co-rotating generators wherein
  - a. each paddle and generator operates independently, and
  - b. the generators are **above the water line**.

Regarding Claim 21, the Lebost reference **further fails** to teach that each of the wheels comprises:

a central hub adapted to substantially exclude said moving stream of fluid from the body of said central hub; and

a plurality of paddles for engaging the said stream of moving fluid each mounted to said central hub for rotation about a paddle vertical axis from a closed and substantially inoperative position to an open and moving fluid engaging position.

Applicant notes that the present invention involves individual co-axial wheel and generator pairs where the energy is drawn from each wheel through the central axis to its corresponding generator independent of the other. Thus, rotational energy is delivered to the same portion of the generator in a standard or routine fashion without the need for special engineering to have the outer generator element whirling around at high speed, effectively greatly increasing the inertia associated with the generator and doubling its relative axle rotational velocity.

Applicant notes that Lebost teaches a fluid (liquid or gas) sourced energy turbine with horizontal rotation. There are two counter-rotating wheels with blades, a funnel-like input and an extra starting power feature

Nowhere in the reference can be found the teaching that each paddle and generator operates independently, the generators are above the water line, a central hub adapted to substantially exclude said moving stream of fluid from the body of said central hub (Claim 21); and a plurality of paddles for engaging the said stream of moving fluid each mounted to said central hub for rotation about a paddle vertical axis from a closed and substantially inoperative position to an open and moving fluid engaging position (Claim 21).

Regarding Claim 8, the Lebost reference further fails to teach a hub which excludes water, thus directing all water flow into the paddle area.

Applicant notes that Lebost has fixed paddles and an excluding central hub.

In addition, Applicant notes that regarding Claim 20, the Lebost reference further fails to teach an offset cavity.

Regarding Claims 20 and 26, the Lebost reference further fails to teach that the central wheel vertical axis is offset from the center of the oncoming flow and the return cavity is small.

Regarding Claim 13, the Lebost reference fails to teach paddles which are essentially solid barriers, centrally located pivot point, closure at a closed, small, central hub and forming a substantially closed barrier to water flow when in the return configuration.

Accordingly, withdrawal of the rejection is respectfully requested.

**Claim Rejection - Obviousness**

The Examiner rejects Claim 5 as being obvious over Lebost (US Patent No. 4,057,270) in view of Downing (US Patent Publication NO. 2002/0141858).

The Examiner's position can be found on pages 3-4 of the Office Action.

Applicant respectfully traverses for the same reasons set forth in the previous paragraph and the following remarks.

Applicant's position regarding the Lebost reference can be found in the previous section.

Applicant notes that the Downing reference does not overcome the deficiencies of Lebost.

Compare with independent claims 7-8 and 21 the Downing reference also fails to teach:

co-rotating generators wherein

- a. each paddle and generator operates independently, and
- b. the generators are above the water line

a central hub adapted to substantially exclude said moving stream of fluid from the body of said central hub (Claim 21); and

a plurality of paddles for engaging the said stream of moving fluid each mounted to said central hub for rotation about a paddle vertical axis from a closed and substantially inoperative position to an open and moving fluid engaging position (claim 21).

Regarding Claim 8, the Downing reference further fails to teach a hub which excludes water, thus directing all water flow into the paddle area.

Applicant notes that the present invention involves individual co-axial wheel and generator pairs where the energy is drawn from each wheel through the central axis to its corresponding generator independent of the other. Thus, rotational energy is delivered to the same portion of the generator in a standard or routine fashion



without the need for special engineering to have the outer generator element whirling around at high speed, effectively greatly increasing the inertia associated with the generator and doubling its relative axle rotational velocity. Both of these elements would teach away from the examiner's after-the-fact conclusion of simplicity of use, manufacture, repair and construction.

Downing teaches an open paddle wheel structure (fig 2) where individual paddles are hinged to the outer edge of a central wheel.

Paddles as shown in Fig 11 open on the power side by rotating in the direction of travel faster than the wheel is turning. The close on the return side by rotating opposite to the direction of rotation of the wheel.

Fig 11 of the Downing reference shows the reverse cycle fully closed and the central area of the wheel structure fully open to the flow of the water. Throughout much of the cycle the Downing arrangement provides substantial open space for fluid flow.

In Fig 8 the wheels are mounted behind weirs to reduce forces on the reverse cycle. Clearly the paddles are not effective in the open position until about 30 degrees of rotation into the power side although the back side will provide some power as at A in Fig 8.

The main features are the paddles which are attached pivotally (hinged) at a great distance from the axis of rotation leaving a large void in the middle. This may be advantageous in open-stream configurations where the basic inertia of the fluid permits the flow-through design.

It is however entirely another matter to say that a closed or

substantially closed return path can be achieved in a flow channel design by simply putting Downing into Lebost. Doing so would be counter-productive as much water flow and, thus, energy, would be diverted around the paddles inwardly of the structure.

Despite the fact that the return path of Downing's paddles forms a barrier to water flow the drive or energy side does not. Moving water will engage the extended paddles and be directed inward into the relatively lower pressure central cavity outside the hub and behind the returning paddles. Downing ignores all energy available from moving water but for that which is directly impinged by the much-offset paddles and even then makes no effort to capture what slides off the paddle towards the center and, indeed, may encourage this waste of available energy.

In view that the present invention is a water turbine with the generators out of the water, Applicant respectfully argues that examiner's conclusion that it would be obvious to combine Lebost and Downing to arrive at the present invention as claimed in Claims 7-8 and 21 is unsubstantiated.

For the reasons set out above it is clearly arguable as Downing prefers the open paddles and wheels with a separated generator while Lebost closes it all in to capture the energy and doubles up not to waste any at all. Applicant also notes that Downing uses only the outer  $\frac{1}{2}$  (approx) of each paddle, if that, as all of the portion inside the rotational axis is countered or overwhelmed by the closed figure presented by the return side.

Applicant respectfully points out to the Examiner whether a skilled unimaginative person would look at Downing with its open

center and wasted energy and think of a confining energy conserving dual situation as Lebost and come up with the present invention.

Applicant respectfully points out to the Examiner that none of the references cited by the Examiner, taken alone or in combination, teach the device according to Claims 7-8 and 21, because both references fail to teach essential features of the claims.

Furthermore, as indicated above there is not any technological motivation to modify the device according to Lebost according to the teaching of Downing.

Accordingly, withdrawal of the rejection is respectfully requested.

#### Claim Rejection - Obviousness

The Examiner rejects Claims 1-5 as being obvious over Downing (US Patent Publication NO. 2002/0141858) in view of Lebost (US Patent No. 4,057,270).

The Examiner's position can be found on pages 4-6 of the Office Action.

Applicant's previous arguments against the un-obviousness of the combination of Lebost and Downing are repeated in this section.

Accordingly, withdrawal of the rejection is respectfully requested.

Favorable consideration and early issuance of the Notice of Allowance are respectfully requested. Should further issues remain prior to allowance, the Examiner is respectfully requested to

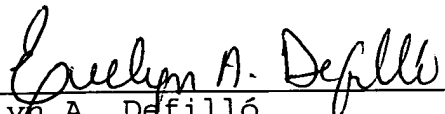
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contact the undersigned at the indicated telephone number.

Respectfully submitted,

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Date: April 11, 2008

**CERTIFICATE OF MAILING**

I hereby certify that a copy of the foregoing AMENDMENT A for U.S. Application No. 10/561,044 filed December 16, 2005, was deposited in first class U.S. mail, with sufficient postage, addressed: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 11, 2008.

  
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Evelyn A. Defillo